

PROCEEDINGS
OF THE
NEW ENGLAND ZOÖLOGICAL CLUB

SOME NEW SOUTH AMERICAN COLD-BLOODED
VERTEBRATES.

BY THOMAS BARBOUR.

FROM October, 1908, to May, 1909, I made a somewhat extended journey in South America. The opportunity to represent Harvard University at the first Pan-American Scientific Congress, which was held in December in Santiago de Chile, was the real occasion of the trip. The larger part of the time, however, was utilized in making collections of the lower vertebrates and insects, to supplement the already very large collections from tropical America, which are in the Museum of Comparative Zoölogy. Material was obtained from Petropolis, Brazil; several stations in the Argentine; north, central, and southern Chile; the highlands of Bolivia and of Peru, as well as the lower-lying coastal region of Peru; Panama, Jamaica, and Cuba.

The collection as a whole, while fairly extensive, does not contain many new forms, though a number are of interest because of their scarcity in museums. To one who has collected considerably through the tropical portions of Asia and the East Indies, the reptile life of even Panama, with its heavy rainfall and luxuriant vegetation, seems scant and disappointing. The remarkably abundant

lizards on very many of the West Indies are, in their naturally restricted areas, probably the commonest reptiles existing. This abundance is not so general on the mainland, though there are, of course, circumscribed areas where very many lizards occur. This is borne out by the published notes of a number of observers. The abundance of individuals of many species of lizards, especially scines, notably on Ceram and Halmahera in the Moluccas, as well as on Waigiu, Jobi, and other Papuan islands, and to some extent on New Guinea itself, calls at once to mind the conditions in the West Indies, already remarked upon. As far as my experience goes, I believe that Cuba and many of the Bahamas support a larger lizard population than do islands of the same size in the East Indies. From the relative abundance of insect life, and from other factors such as climate and vegetation, one would expect a reversed condition of affairs. Including all classes of reptiles and amphibians, the writer has been able to gather more individuals in a given time in Western Java than in any other region, indeed so many more that it seems improbable that the excellent native assistance in collecting was entirely accountable for this result, especially as the same natives were carried about and used elsewhere. These other localities were, however, strange to them, which would naturally result in a somewhat smaller average daily bag. Reptiles are markedly abundant in various localities in Burma, Malaya, and about Saigon in Cochin China, but they simply teem in the country lying between Buitenzorg and the Preanger Regencies, especially in the forests on the slopes of the Gedeh, Pangerango, Papandaiang, Tangkuban Prau, and other mountains near by.

It is worth while to mention that at Petropolis, in Brazil, *Siphonops braziliensis* Lützk. occurred in about equal numbers with *S. annulatus* (Mikan), though the former has always been very rare in museums. It was found by digging in the moist earth under manure heaps about stables. In the shrubbery of the garden of the American Embassy the rasping, heavy snore of *Hyla circumdata* (Cope) was audible, during showery weather, nearly every night. The sound could be located, and then the frog found by means of a lantern. They seldom fled from the light. On stone walls near-by the curious lichen-like *Thoropa miliaris* (Spix) was not at all un-

common. This species was not represented in the British Museum when Boulenger wrote his catalogue, nor was it, up to now, in either the United States National Museum or the Museum of Comparative Zoölogy. In southern Chile, in small ponds, *Rhinoderma darwini* D. and B. was abundant. In December eight males, out of about sixty individuals of both sexes, were found to be carrying tadpoles in the throat pouch. In the Cordillera of the Argentine *Liolaemus fitzgeraldi* Blgr. was found in the Horcones Valley near Mt. Aconcagua, whence came the types, and the species was observed at an elevation of about 12,000 feet near Las Cuevas, the Argentine frontier post on the Transandine route to Chile. On a hill not far from Tiaguanaco in Bolivia, at an altitude of a little over 13,000 feet, three specimens of the recently described *Liolaemus lenzii* Boettger, as well as the new species of the same genus described below, were found. A specimen, from Bolivia, of the rare *Drepanodon anomalus* (Jan) has been identified for me by Dr. Stejneger.

My thanks are due to the companions whose loyalty to Harvard University prompted them not only to render every aid in making the various collections, but also made their efforts pleasures. I mention especially Prof. A. C. Coolidge, Dr. H. Bingham, and Mr. C. L. Hay. To my wife, my most consistent helper in many climes, and to our friend Mrs. W. A. Russell, my deepest thanks are also due.

As so often, I owe a great deal to Dr. L. Stejneger for kind criticism and advice.

While I was in Bolivia several foreigners with mining interests in the tropical eastern part of the country, described to me a peculiar lizard, which from their description appeared quite new. Thanks to the efforts of one of these friends, a specimen was waiting for me on my return to the Museum. I took it to Washington, where Dr. Leonhard Stejneger agreed that it represented a very remarkable, hitherto unknown, species. It may be known as

Diploglossus resplendens sp. nov.

Plate 4.

Type,—a single example, no. 7286, Museum of Comparative Zoölogy, from the junction of the Kaka and Beni Rivers, tropical eastern Bolivia; Frank J. Dunleavy, collector.

This species belongs to the genus in which it is placed, in its restricted sense. The digits terminating in a large compressed sheath, into which the claw may be retracted, distinguish it at once from a *Celestus*, in which genus the unguis sheath is wanting.

Lateral teeth simple, recurved, with rather obtuse crowns. Head depressed; not distinct from neck; snout short; canthus rostralis rather rounded; ear opening easily visible, roundish in outline; three praefrontals, azygos a little smaller, broader than long, separated from the frontal; frontal nearly twice as long as broad; parietal on each side separated from the frontal and supraoculars by two shields; nasal separated from the rostral; two postnasals; rostral somewhat broader than the mental; the suture between the sixth and seventh supralabial falls below the centre of the eye; four chin shields on each side, of which only the anterior is in contact with the infralabials. Body somewhat squarish in cross section, but depressed. Forty-four rows of striate scales around the middle of the body. The adpressed limbs do not meet. Digits not markedly shortened, slender. Tail cylindrical, longer than head and body.

Color very striking. Upper surfaces black, the back with nine white cross-bars, the tail, with eight. Of these, the distal three show a suffusion of yellow and pink. The ninth band on the body runs out onto the thighs. Lower surfaces of body rosy to deep pink; a fine red spot in the middle of each black band on the ventral surface of the tail. Limbs, laterally, grayish to brownish.

This beautiful lizard is most nearly related to *D. fasciatus* (Gray) from Brazil. It is strikingly different in many respects, however, and its discovery has greatly increased the hitherto recorded range of the genus.

Liolaemus alticolor sp. nov.

Plate 5, upper figure.

Types,— two specimens, no. 7287, Museum of Comparative Zoölogy, from near Tiaguanaco, Bolivia, altitude about 13,100 feet; T. Barbour, collector.

Nostrils lateral. Upper head-scales rather small, smooth, somewhat convex; a small frontal; interparietal smaller than parietals; two or three greatly enlarged supraoculars; a single series of scales between the supralabials and the infraocular; temporal scales slightly swollen but smooth; anterior border of ear with one or two very small projecting scales. Sides of neck with a few granular scales, not conspicuously folded. Dorsal scales rather large, strongly imbricate, keeled, mucronate; lateral scales smaller; ventrals smaller than dorsals, rounded, smooth; fifty to fifty-four scales around middle of body. The adpressed hind limb reaches to between shoulder and ear. Hinder side of thighs granular. Male with three preanal pores.

Color complicated in pattern. Above with longitudinal lines and stripes of black, grayish, light and dark brown. Sides of male red, of female brown. Belly silvery gray.

These specimens were caught as they ran into a very ancient stone wall, during a flurry of snow. No others of the species were seen.

Among a number of tree frogs taken by Mr. Hay and me, while in Petropolis, is a specimen which does not seem referable to any described species; it may be known as

Hyla hayii sp. nov.

Plate 5, lower figure.

Type,— a single example, no. 2513, Museum of Comparative Zoölogy, from Petropolis, Brazil.

Tongue subcircular, slightly nicked and scarcely free behind. Vomerine teeth in a single, very slightly curved, series between the posterior limits

of the choanae. Head as broad as long; snout flat, rather prominent, once and one-third the diameter of the eye; canthus rostralis indistinct; sides of snout slightly concave; eye large, prominent; tympanum distinct, about half the diameter of the eye. Fingers absolutely unwebbed, toes fully webbed; discs of fingers very well developed, broader than long; discs of toes round and smaller than those of fingers; subarticular tubercles inconspicuous; no tarsal fold. A very slight rudiment of a pollux. The hind limb being carried along the body, the tibio-tarsal articulation reaches between the eye and nostril. Upper surfaces smooth, lower surfaces finely granulate. In life, green above, with a gray, almost colorless, spot between the shoulders; yellowish below; hinder side of thighs with a brilliant marbling of black and yellow, this marking extends to the posterior portion of the sides. In alcohol the green has changed to a dusky brown, the yellow to dirty white.

Named for Mr. Clarence L. Hay, an enthusiastic helper on many collecting excursions.

EXPLANATION OF THE PLATES.

PLATE IV.

Diploglossus resplendens. Dorsal and ventral views.

PLATE V.

Upper figure. Dorso-lateral view of type of *Liolaemus alticolor*.
Lower figure. Dorso-lateral view of type of *Hyla hayii*.